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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/631,985	07/31/2003	Jochen Junkawitsch	P17088-US1	2207

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EXAMINER	
JACKSON, JAKIEDA R	
ART UNIT	**PAPER NUMBER**
2626	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/631,985	JUNKAWITSCH ET AL.	
	Examiner	Art Unit	
	Jakieda R. Jackson	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 4/24/07.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-22 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-22 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. In response to the Office Action mailed January 29, 2007, applicant submitted an amendment filed on April 24, 2007, in which the applicant amended and requested reconsideration with respect to the independent claims.

Response to Arguments

2. Applicant argues that Mitchell completely ignores the impact of the echo from the outgoing voice prompt. There is no teaching or suggestion of any method for distinguishing the user's barge-in speech commands from the voice prompt echo, as recited in each of the independent claims. In response to applicant's arguments, the recitation voice prompt echo has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). Besides, this echo is not claimed in each of the independent claims as the Applicant argues.

Applicant argues that the invention differs from Mitchell and Bridges because it mathematically models the words of both the outgoing voice prompt and a set of command words that may be spoken by the user to barge in. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is

noted that the features upon which applicant relies (i.e., modeling the words of both the outgoing voice prompt and a set of command words that may be spoken by the user to barge in) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). However, the claims do recite mathematically representing the words of the system voice prompt.

Applicant also argues that Mitchell does not teach or suggest modeling and analyzing the words of the system prompt. Furthermore, Applicant argues that Backfried does not teach or suggest modeling and analyzing the words of a system voice prompt. Applicant arguments are persuasive, but are moot in view of new grounds of rejection. Comerford et al. teaches one example of a user recognition technique is speaker recognition. Speaker recognition (identification/verification) can be done in text-dependent or text-prompted mode (where the text of an utterance is prompted by the speech recognizer and recognition depends on the accuracy of the words uttered as compared to the prompted text), or text-independent mode (where the utterances of the speaker are used to perform recognition by comparing the acoustic characteristics of the speaker with acoustic models of previously enrolled speakers, irrespective of the words uttered). Regardless of the mode employed, speaker recognition usually involves the comparison of the utterance with a claimed speaker model. A measure of the match between model and utterance is thereafter compared to Mita similar measure obtained over competing models, for instance, cohort or background models. Cohorts are composed of previously enrolled speakers who

possess voice (acoustic) characteristics that are substantially similar, i.e., closest, to the speaker who tries to access the service and/or facility. Cohort models are the acoustic models built from acoustic features respectively associated with the cohort speakers. A background model is an average model built from acoustic features over the global population (column 1, lines 30-51).

Applicant further argues that nothing in Hardwick suggests that the 20dB attenuation has anything to do with the way an acoustic model of a system voice prompt is generated. However, Hardwick was used to teach that 20dB attenuation is typical, old and well known in the art of speech processing. Therefore, Applicant's arguments are not persuasive.

Thus, since the deficiencies of Mitchell, Bridges, Backfried, and Helbing have been cured, a prima facie case of obviousness has been established.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. **Claims 1, 4 and 6, 9, 11, 13, 15, 19 and 21** are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitchell et al. (USPN 6,574,595), hereinafter referenced as Mitchell in view of Comerford et al. (USPN 6,107,935), hereinafter referenced as Comerford.

Regarding claims **1, 11 and 19**, Mitchell disclose a method, recognizer and system, hereinafter referenced as a method, of suppressing speech recognition errors in a speech recognition system in which an input signal includes an echo from a system voice prompt combined with user input speech, said method comprising the steps of:

generating an acoustic model of the system voice prompt, said acoustic prompt model mathematically representing the system voice prompt (ASR system models acoustic speech; column 3, lines 27-66);

supplying the input signal to a speech recognizer having an acoustic model of a target vocabulary, said acoustic target vocabulary model mathematically representing at least one command word (column 4, lines 27-38);

comparing the input signal to the acoustic prompt model and to the acoustic target vocabulary model (column 3, lines 27-66);

determining which of the acoustic prompt model and the acoustic target vocabulary model provides a best match for the input signal during the comparing step (best match; column 3, lines 27-66);

accepting the best match if the acoustic target vocabulary model provides the best match (column 3, lines 27-66 and column 6, lines 11-65); and

ignoring the best match if the acoustic prompt model provides the best match (ignore contentless sound energy; column 1, lines 52-56 and column 3, lines 27-66 with column 5, line 52 – column 6, line 65 and column 7, lines 26-40), but does not specifically teach mathematically representing the words of the system voice prompt.

Comerford discloses a method mathematically representing the words of the system voice prompt (column 1, lines 30-51), providing a reasonable false acceptance rate.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Mitchell's method such that it mathematically representing the words of the system voice prompt, as taught by Comerford, to provide systems and methods for filtering access to a service/facility which substantially eliminate false rejections while providing a reasonable false acceptance rate (column 1, lines 30-61).

Regarding **claim 4**, Mitchell disclose a method wherein the step of generating an acoustic model of the system voice prompt includes the steps of:

sending the speech signal of the system prompt to the speech recognizer (input speech; column 3, lines 27-66); and

generating the acoustic prompt model from the speech signal immediately before the comparing step (column 3, lines 27-66).

Regarding **claim 6**, Mitchell disclose a method further comprising the steps of:

comparing the input signal to a silence model, at least one out-of-vocabulary word model, and at least one noise model (column 3, lines 28-67);

determining whether one of the silence, out-of-vocabulary, or noise models provides the best match during the comparing step (best match; column 3, lines 28-67 with column 5, lines 38-43); and

ignoring the best match if one of the silence, out-of-vocabulary, or noise models provides the best match (ignore contentless sound energy; column 1, lines 52-56 with column 3, lines 27-66).

Regarding **claim 9**, Mitchell disclose a method wherein the step of supplying the input signal to the speech recognizer includes supplying to a simple connected word recognition grammar, the input signal in parallel with the acoustic target vocabulary model and the acoustic prompt model (column 4, lines 6-13).

Regarding **claims 13 and 21**, Mitchell discloses a recognizer further comprising means for generating the acoustic prompt model from the speech signal of the system voice prompt prior to playing the prompt (column 3, lines 28-67).

Regarding **claim 15**, Mitchell discloses a recognizer of claim further comprising a silence model, at least one out-of-vocabulary word model, and at least one noise model connected to the comparer in parallel with the acoustic vocabulary model and the acoustic prompt model (column 4, lines 6-13), wherein the comparer also determines whether the best match is provided by the silence model, the at least one out-of-vocabulary word model, or the at least one noise model, and if so, ignores the best match (column 3, lines 28-67).

Regarding **claim 18**, Mitchell discloses a recognizer wherein the comparer includes a comparison function selected from a group consisting of:

an arbitrary grammar (grammar; column 3, lines 28-67);

a simple connected word recognition grammar (recognition grammar; column 3, lines 28-67); and

a language model (models; column 3, lines 28-67).

5. **Claim 10** is rejected under 35 U.S.C. 103(a) as being unpatentable over Bridges (USPN 5,978,763) in view Comerford.

Regarding **claim 10**, Bridges disclose a method of suppressing speech recognition errors and improving word accuracy in a speech recognition system that enables a user of a communication device to interrupt a system voice prompt with command words that halt the voice prompt and initiate desired actions, said method comprising the steps of:

generating an acoustic model of the system voice prompt, said acoustic prompt model mathematically representing the system voice prompt (column 1, lines 41-46 with column 6, lines 28-34);

storing the acoustic prompt model in a speech recognizer (column 4, lines 38-48);

storing an acoustic target vocabulary model in the speech recognizer, said acoustic target vocabulary model including models of a plurality of command words (column 2, lines 38-44);

supplying the input signal to a comparer in the speech recognizer (column 6, lines 5-34);

comparing the input signal to the acoustic target vocabulary model and the acoustic prompt model to identify which model provides a best match for the input signal (column 6, lines 5-34);

ignoring the best match if the acoustic prompt model provides the best match (column 6, lines 5-36);

accepting the best match if the acoustic target vocabulary model provides the best match (column 6, lines 5-36);

supplying to an action table, any command word corresponding to the best match provided by the acoustic target vocabulary model (best match; column 3, lines 28-67);

identifying from the action table, an action corresponding to the supplied command word (column 6, lines 5-34);

halting the system voice prompt (column 4, lines 57-62); and

initiating the identified action (appropriate action is taken; column 4, lines 57-62), but does not specifically teach mathematically representing the words of the system voice prompt.

Comerford discloses a method mathematically representing the words of the system voice prompt (column 1, lines 30-51), providing a reasonable false acceptance rate.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Bridges' method such that it mathematically representing the words of the system voice prompt, as taught by Comerford, to provide systems and methods for filtering access to a service/facility which substantially

eliminate false rejections while providing a reasonable false acceptance rate (column 1, lines 30-61).

6. **Claims 2-3** are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitchell in view of Comerford, as applied to claim 1 above, and in further view of Backfried et al. (USPN 6,801,893), hereinafter referenced as Backfried.

Regarding **claim 2**, it is interpreted for the same reasons as set forth in claim 1. In addition, Mitchell disclose a method wherein the step of generating an acoustic model of the system voice prompt is performed in advance of the comparing step and includes the steps of:

determining phonetic units utilized in the system prompt (phonemes; column 3, lines 27-66);

storing the phonetic units in a phonetic unit database accessible by the speech recognizer (phonemes; column 3, lines 27-66 with column 6, lines 41-50 and column 8, lines 47-66), but does not specifically teach providing the speech recognizer with an orthographic text of the prompt prior to playing the prompt and building the prompt model by the speech recognizer, said speech recognizer selecting and concatenating appropriate phonetic units based on the orthographic text of the prompt.

Backfried teaches a method including the steps of:

providing the speech recognizer with an orthographic text of the prompt prior to playing the prompt (figure 1, element 101 with figure 4 and column 4, lines 21-38); and

building the prompt model by the speech recognizer, said speech recognizer selecting and concatenating appropriate phonetic units based on the orthographic text of the prompt (figure 1, element 105 with figure 4 and column 1, lines 43-55), for adding new words with yet unseen spellings and pronunciations to the vocabulary of a speech system.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Mitchell in view of Comerford's method wherein it includes the steps of storing the phonetic units in a phonetic unit database accessible by the speech recognizer, but does not specifically teach providing the speech recognizer with an orthographic text of the prompt prior to playing the prompt and building the prompt model by the speech recognizer, said speech recognizer selecting and concatenating appropriate phonetic units based on the orthographic text of the prompt, as taught by Backfried, to add new words to a vocabulary which leads to reduced user frustration and an improved perception of system usability (column 3, lines 44-46).

Regarding **claim 3**, it is interpreted for the same reasons as set forth in claim 1. In addition, Mitchell disclose a method wherein a plurality of system voice prompts are stored in a system prompt database accessible by a prompt server that plays selected prompts, and phonetic units associated with the plurality of system voice prompts are stored in the phonetic unit database, and wherein the method further comprises, prior to supplying the input signal to the speech recognizer, the steps of:

instructing the prompt server to select and play a selected system prompt (abstract with column 1, lines 52-56 with column 6, lines 41-50);

informing the speech recognizer (ASR) which system prompt (prompt) is going to be played (abstract with column 1, lines 52-56 with column 6, lines 41-50); and

retrieving by the speech recognizer, phonetic units from the phonetic unit database that are appropriate for an acoustic prompt model corresponding to the selected system prompt (column 3, lines 27-66 and column 7, lines 26-40).

7. **Claims 5, 14 and 22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitchell in view of Comerford, and in further view of Hardwick (PGPUB 2004/0093206).

Regarding **claims 5, 14 and 22**, Mitchell in view of Comerford disclose a method of suppressing speech recognition errors, but does not specifically teach wherein the step of generating an acoustic model of the system voice prompt includes generating the acoustic prompt model at an attenuation level of approximately 20 dB relative to the system voice prompt.

Hardwick discloses a method wherein the step of generating an acoustic model of the system voice prompt includes generating the acoustic prompt model at an attenuation level of approximately 20 dB relative to the system voice prompt (columns 8-9, paragraph 0080), to attenuate the undesirable harmonic sidelobes that are introduced by the spectral magnitude quantizer.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Mitchell in view of Comerford's method wherein the step of generating an acoustic model of the system voice prompt includes generating the acoustic prompt model at an attenuation level of approximately 20 dB relative to the system voice prompt, as taught by Hardwick, to reduce the amount of distortion and improve fidelity in the synthesized tome signal without requiring any modifications to the quantizer, thereby maintaining interoperability with the standard vocoder (column 9, paragraph 0080).

8. **Claims 7-8 and 16-17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitchell in view of Comerford, and in further view of Bridges.

Regarding **claims 7 and 16**, Mitchell in view of Comerford disclose a method wherein the step of comparing the input signal to a silence model (silence), at least one out-of-vocabulary (out-of-vocabulary) word model, and at least one noise model (garbage; column 3, lines 27-66/Mitchell), but does not specifically teach a method wherein the comparing step includes comparing the input signal to a noise model that represents background babble.

Bridges discloses a method wherein the comparing step includes comparing the input signal to a noise model that represents background babble (background noise from a telephone conversation; column 1, lines 19-23), to take account of background noises.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Mitchell in view of Comerford's method wherein the comparing step includes comparing the input signal to a noise model that represents background babble, as taught by Bridges, to allow for the correct action to take place, even when there is noise present (column 1, lines 10-24).

Regarding **claims 8 and 17**, Mitchell in view of Comerford disclose a method wherein the step of comparing the input signal to a silence model (silence), at least one out-of-vocabulary (out-of-vocabulary) word model, and at least one noise model (garbage; column 3, lines 27-66/Mitchell), but does not specifically teach a method including comparing the input signal to a noise model that represents background car noise.

Bridges discloses a method including comparing the input signal to a noise model that represents background car noise (noise of a car's engine; column 1, lines 19-23), to take account of background noises.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Mitchell in view of Comerford's method including comparing the input signal to a noise model that represents background car noise, as taught by Bridges, to allow for the correct action to take place, even when there is noise present (column 1, lines 10-24).

9. **Claims 12 and 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitchell in view of Comerford and in further view of Helbing (PGPUB 2005/0038659).

Regarding **claims 12 and 20**, Mitchell in view of Comerford disclose a recognizer for suppressing speech recognition errors, but does not specifically teach a recognizer comprising means for generating the acoustic prompt model from a known text.

Helbing discloses a recognizer comprising means for generating the acoustic prompt model from a known text (column 1, paragraph 0004), in order to be of service to various users.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Mitchell in view of Comerford's recognizer comprising means for generating the acoustic prompt model from a known text, as taught Backfried, in order to be of service to various users and for connection to a suitable terminal of the user (column 1, paragraph 0003-0004).

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jakieda R. Jackson whose telephone number is 571-272-7619. The examiner can normally be reached on Monday, Tuesday and Thursday 7:30 a.m. to 5:00p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on 571-272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JRJ
July 4, 2007

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